

MENAREC 5

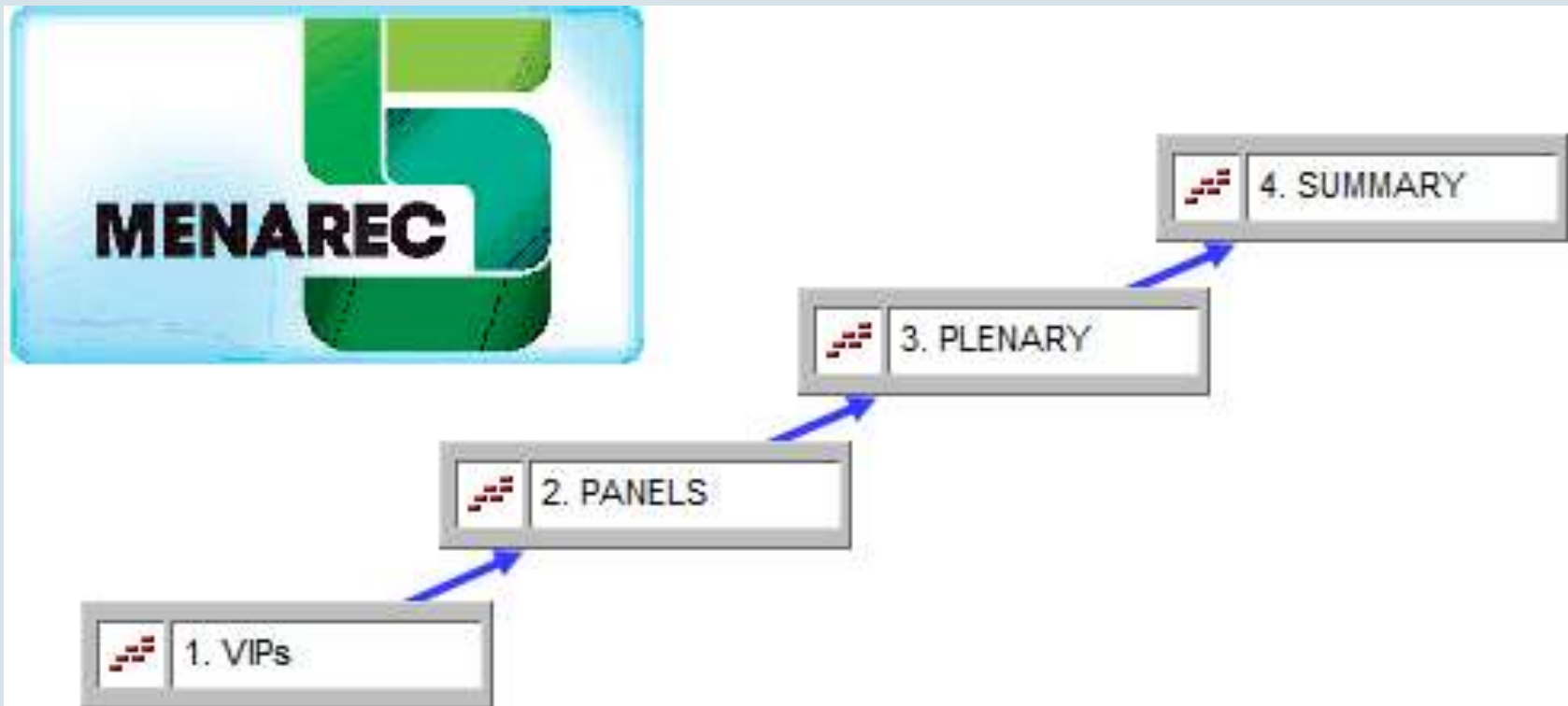
Together for Tomorrow's energy

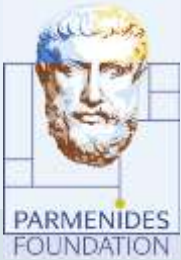
Marrakech

15 & 16 May 2012

MENAREC 5

application





This report

application

This report presents the numerous speeches and discussions held during MENAREC 5 in a novel format. It deliberately breaks with a “who said what” approach, to focus on the strategic features that became apparent across the many comments made.

With this in mind, the plenary sessions and panels have all been broken down into :

1. Objectives
2. Obstacles
3. Options

The logic underlying this is relatively simple: our objectives determine where we want to go; once the direction and level of ambition is set, we can then see better what obstacles are likely to hinder us in reaching the objectives. This allows us in turn to reflect on what options we have for overcoming the obstacles identified: these are the recommendations that need to be taken into account.

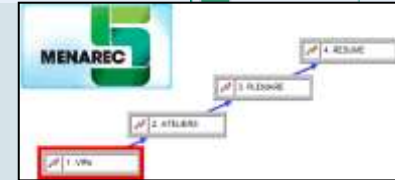
Please note, the options and hence recommendations do not pretend to be exhaustively listed, and more importantly, they may not be supported by all participants. Indeed, this entire report is issued only under the responsibility of its authors: Ali Agoumi, Abdelkader Baouendi, Mohamed El-Khawed, Faten Khamassi, Adrian Taylor, and does not reflect the official position of any organisation or government participating in MENAREC5.

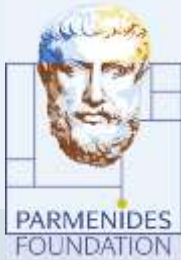
If you only wish to read the summary of final recommendations for the whole conferences, [click here](#) when in “presentation mode”.

The VIP Sessions (Plenary sessions, first morning)

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VIP









Our top level goal is the sustainable development of Renewable Energies (RE) and Energy Efficiency (EE) in the Middle East & North African (MENA) region

application

VIP



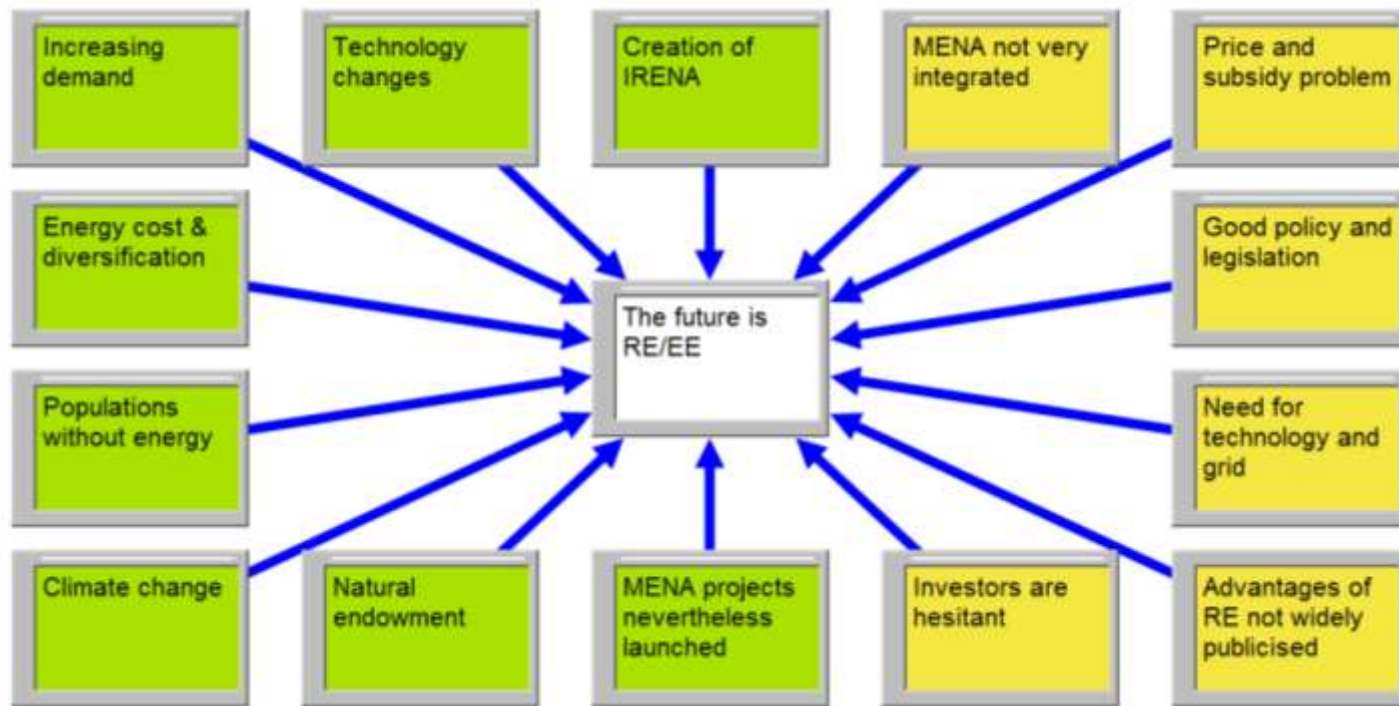
The following objectives can be associated with this goal:

-  Increase share of REs in total energy mix
-  Create an RE industrial base in MENA countries
-  Improve access of all, especially the poorest, to energy
-  Decrease carbon emissions and protect the environment

Factors helping and obstacles hindering the spread of RE/EE in the MENA region

application

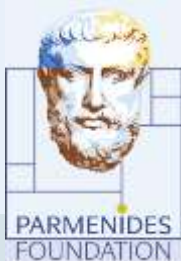
VIP



Factors encouraging = green

Obstacles hindering = beige

The future is RE/EE: This includes not just electricity (PV and CSP) , but also heat, and transport. It can also be used to dispose of biomass and for desalination purposes as well!



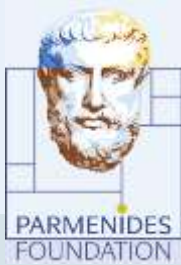
Factors encouraging – hidden texts

application

VIP



- ❑ **Populations without energy:** E.g. for isolated country areas. These regions need energy, otherwise they will not be able to develop
- ❑ **Energy cost & diversification:** Prices for traditional energies are increasing, which is bad for those not producing hydrocarbons, whilst those producing them wish to diversify their offering (and hence revenues.
- ❑ **Increasing demand:** Demand is increasing from the region itself (MENA has a GDP growth rate of 4.5% a year) and also from Europe (for instance with its 20/20/20 targets, and especially now Germany wishes to eliminate nuclear power use), and even also from emerging economies
- ❑ **Climate change:** There is much pressure to reduce greenhouse gas emissions.
- ❑ **MENA projects nevertheless launched:** Despite obstacles big investments are taking place, and globally investments in REs overtook those in fossil energies in 2011 for the first time ever. Moreover investments in emerging markets overtook those in developed countries in 2010 for the first time. However, the progress in the MENA region is slower, although many have announced ambitious targets: E.g.
 - Morocco aims to have 2000 MW solar and 2000 MW wind energy, with REs making up 40% of total energy production by 2030
 - Egypt wants REs to make up 20% of its energy generation by 2020.
- ❑ **Technology changes:** PV prices will continue to diminish. The current prognosis is that they will cost half their current price by 2020
- ❑ **Natural endowment:** The MENA region enjoys much sun, and in some places constant wind, making it an ideal region for alternative energy generation. For example, the town of Aden alone could produce enough energy for the whole of the local (Yemeni) market.
- ❑ **Creation of IRENA:** IRENA was created to promote: - Knowledge management - technological innovation - capacity building - MENA is one of its priority regions



Obstacles hindering – hidden texts

application

VIP



- ❑ **Price and subsidy problem:** Subsidies made for social reasons mean that there is not a level playing field. REs cannot fairly compete in these circumstances.
- ❑ **Advantages of RE not widely popularised:** most people in the region are ignorant of both the advantages and also the opportunities: this does not encourage use or investment
- ❑ **Need for technology and grid:** without an effective grid linked around the MENA region, any dream of building a greater market is illusory. This requires physical connections, better technology (e.g. to reduce transmission losses, and smart grids) and also commercial organisation of the market (trading exchanges etc)
- ❑ **Good policy and legislation:** This is variable in the region: investors dislike the absence of a clear and harmonised legal/policy framework.
- ❑ **Investors are hesitant:** We need to provide investors a greater sense of security
- ❑ **MENA is not very integrated:** Investors are worried about the lack of regional integration, which means the market does not have scale advantages. Europe provided an example here, starting its integration with coal and steel.

The options for overcoming these obstacles

application

VIP



How to eliminate/get round the obstacles

Policy on price
of energy

Transparent
real prices for
traditional

Incentives for
ERs

Partenariat
public-private

Encourage
partnerships

Partenariat
with the EU
and others

Continue
current
partnership

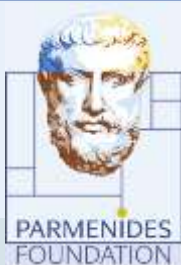
Liberalisation
of the markets

Restructure
electricity
markets

Regional Grid
integration

Create a big
market in RE:
MENA

Build intelligent
grids



Options – hidden texts

application

VIP



POLICY ON PRICE OF ENERGY

- ❑ **Transparent real prices for traditional energy:** it is necessary to review subsidies to ensure that legitimate support for the poor does not, as a side effect, destroy the market for Renewable Energies. Request for a study on this subject.
- ❑ **Incentives for ERs:** One option is to encourage ERs with fiscal subsidies, or at least not to tax them.

PARTENARIAT PUBLIC-PRIVATE

- ❑ **Encourage partnerships:** Transfer of technology, skills and innovation is needed to local industrial partners to ensure an industrial base is created.

PARTNERSHIP WITH THE EU AND OTHERS

- ❑ **Continue the current partnership:** and deepen it further

LIBERALISATION OF THE MARKETS

- ❑ **Restructure the electricity markets** to allow RE producers to sell on the grid

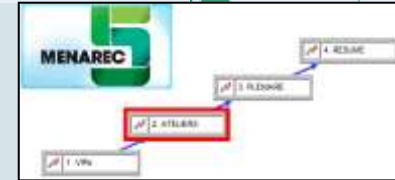
REGIONAL GRID INTEGRATION

- ❑ **Create a big market in RE: MENA & beyond:** This implies physical linking of the grids so we can have a network that spreads from the Atlantic to the Gulf. Plans for Egypt-Gaza and even Egypt-Greece are good, but much more is needed
- ❑ **Build intelligent grids**

The panels

application

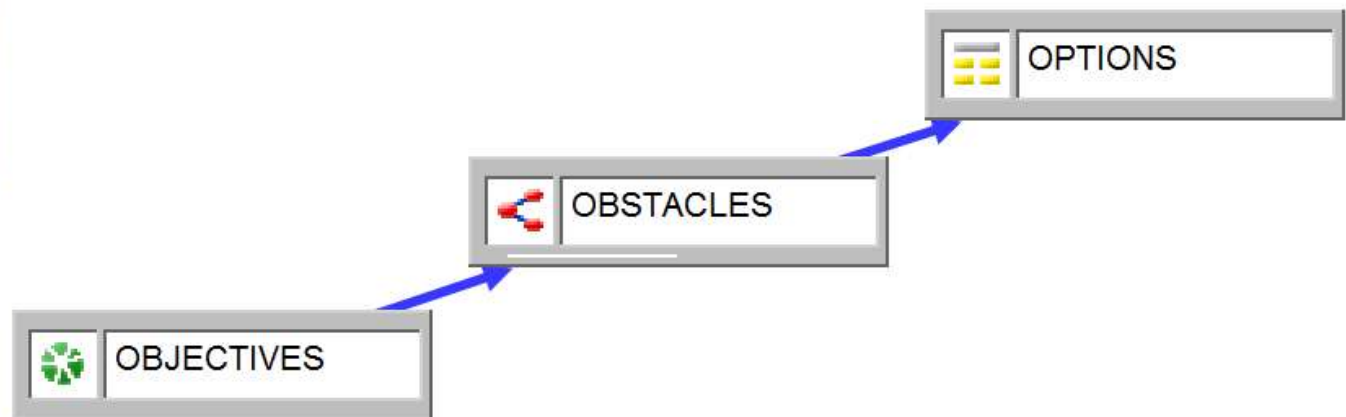
Panels

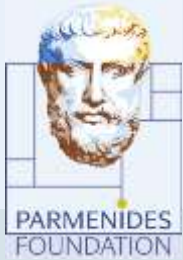


What are the policy options for an accelerated deployment of RE in the EU-MENA region?

application

Panel 1

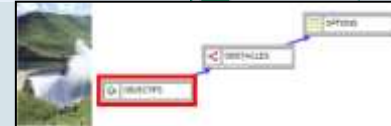











Our top level goal is an accelerated deployment of RE in the EU-MENA region

application

Panel 1



The following objectives can be associated with this goal:

-  Satisfy energy needs
-  Industrial development and creation of jobs
-  Reduce energy dependency
 -  "the energy bill"
-  Protect the environment (climate)
 -  cover the needs of the water sector
 -  climate and energy nexus

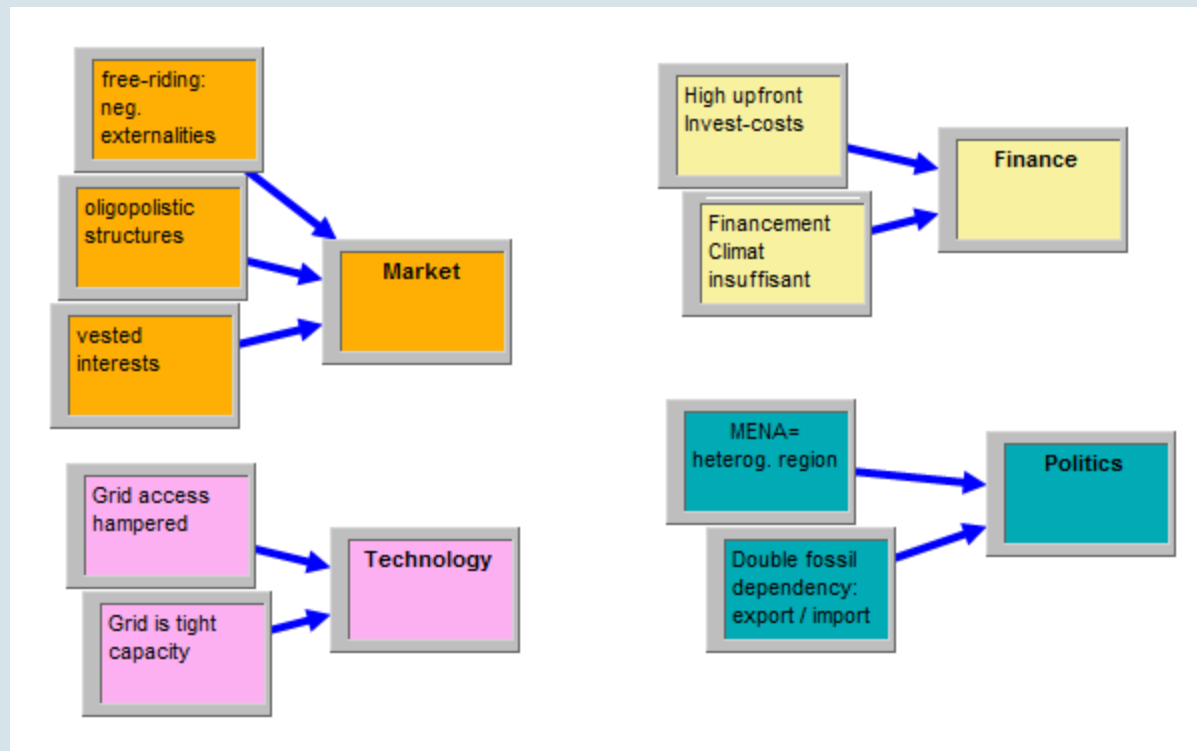
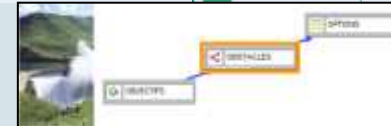
Hidden text:

- Economic growth in MENA 2010:4,3%; 2011: 3.1%, 2016: 5,5% 2012
-2016: planned 106 GW Production equals to 50billion

Obstacles to the accelerated deployment of Renewable Energies in the EU-MENA region

application

Panel 1



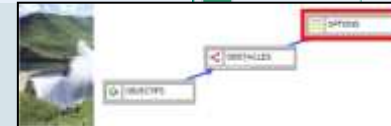
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- ❑ **Financement Climat insuffisant/ Poor financial climate:** MDP is not a very interesting way of financing large scale RE projects

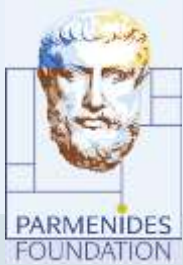
What options exist to accelerate the deployment of REs in the EU-MENA region?

application

Panel 1



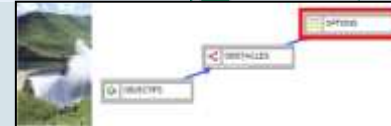
Options			
Market	Finance	Politics	Technology
Clear, explicit, ambitious targets for REs	Reduce uncertainty for investors	Stable RE policies	Develop the networks better
Coordinate incentive mechanisms	Develop profitable projects: wind power	Develop framework conditions	"smart grid"
Develop profitable projects: demand "peak"	Euro-Mediterranean fund and	Involve civil society and the private sector	Have a hybrid approach to RE (e.g. CSP-Gas)
Market Transparency	"project preparation facility": pilot projects	MSP: develop links between Member States	Research & development
	Market Transparency	Involve local industry in REs	
		Stronger role for LAS, ufms, RCREEE	
		Market Transparency	



Deployment options – hidden texts

application

Panel 1

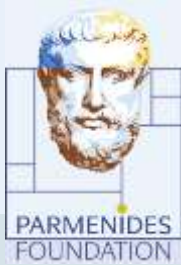


MARKET

- ❑ **Clear, explicit, ambitious targets for Res:** Give explicit numbers, not just vague indications
- ❑ **Coordinate incentive mechanisms**
- ❑ **Develop profitable projects: demand "peak":** There are already peaks in demand which conventional sources have difficulty handling. With the rise of living standards there is now a summer peak in the afternoon (air conditioning) which could be covered by solar that peak at this time too.
- ❑ **Market Transparency:** Ensure there is a good information flow and clear data on the energy markets: all in a one-stop-shop

FINANCE

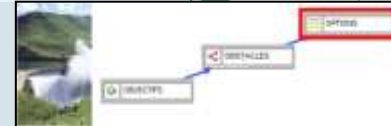
- ❑ **Reduce uncertainty for investors**
- ❑ **Develop profitable projects: wind power:** Wind is in e.g. Morocco is competitive and to build coal plants is to waste money...
- ❑ **Euro-Mediterranean fund and Regional Banks**
- ❑ **"Project preparation facility": pilot projects:** Being developed by UfMS
- ❑ **Market Transparency:** Ensure there is a good information flow and clear data on the energy markets: all in a one-stop-shop



Deployment options – hidden texts

application

Panel 1

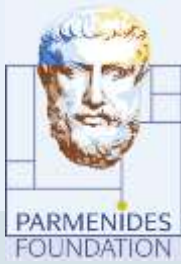


POLITICS

- ❑ **Stable RE policies**
- ❑ **Develop framework conditions:** concrete policy proposals for policy and regulatory changes) - Example: EU Directive 2009/28/EC with binding targets for EU-MS
- ❑ **Involve civil society and the private sector**
- ❑ **MSP: develop. links between Member States**
 - More regional Networking
 - Create opportunities for regular UfMS Member State (MS) meetings
 - UfMS/MSP as focal point for MS
- ❑ **Involve local industry in REs:** also with such things as scientific research
- ❑ **Stronger role for LAS, UfMS, RCREEE:** League of Arab States
- ❑ **Market Transparency:** Ensure there is a good information flow and clear data on the energy markets: all in a one-stop-shop

TECHNOLOGY

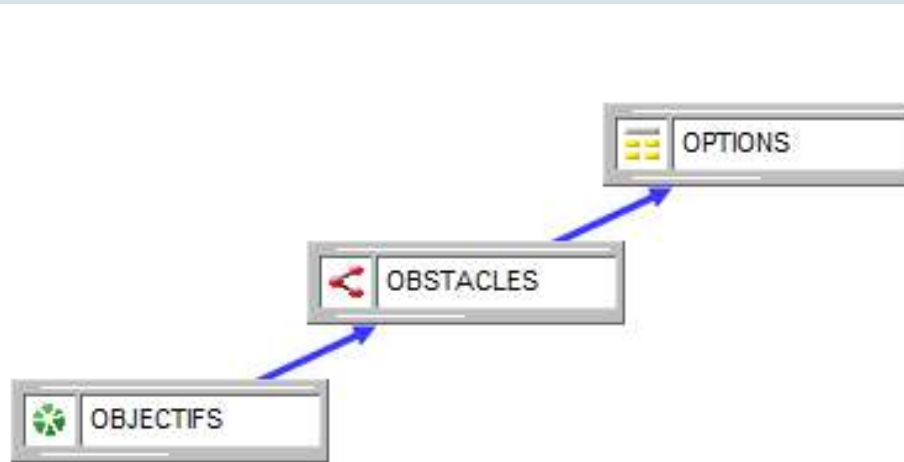
- ❑ **Develop the networks better**
- ❑ **"smart grid"**
- ❑ **Have a hybrid approach to RE(e.g. CSP-Gas)**
- ❑ **Research & development**

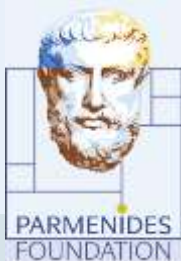


Training, R&D and Innovation

application

Panel 2









The overarching goal is promotion of Training, R&D and Innovation in the RE and EE sectors

application

Panel 2

The following objectives can be associated with this goal:

-  Develop a skilled labour force that creates jobs in RE and EE
-  Spread knowledge and competence already existing in the region
-  Spur industrial development from R&D projects
-  Adapt the RE and EE technologies to local needs and conditions



Obstacles in the way of training, R&D and innovation

application

Panel 2



Insufficient Exchange of info.

Lack of info. on existing courses

Lack of info. on the profiles wanted

Intra-Regional Relations not exploited

Unable to cover all in one institution

Advantages of each country not used

Institutes are not linked to each other

Lack of an Overview

Lack of expertise in all parts of sector

Impact on broader energy market ignored

Different training according to type of tech.

Need training for technicians too

Attractiveness of these studies not great enough

DESERTEC not well known

Why is there unemployment ?

Environment is not yet prepared

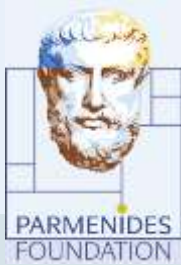
Insufficient Technological Development

Technological development

Bureaucracy slows innovation

Lack of Finances

Financing studies and research



Obstacles - Hidden Texts

application

Panel 2



INSUFFICIENT EXCHANGE OF INFORMATION

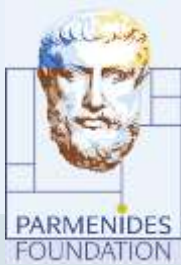
- ❑ **Lack of information on existing courses:** no single list that can be found of all relevant courses available in the MENA region.
- ❑ **Lack of information on the profiles wanted:** In many countries we do not know what jobs are going to be needed in the future. It is necessary to estimate the types of profiles needed. Morocco has done just such a study in order to adapt the supply to the likely future demand. This is a good model to copy.

INTRA-REGIONAL RELATIONS NOT EXPLOITED

- ❑ **Unable to cover all in one institution:** even in any single country we cannot cover all the subjects needed
- ❑ **Advantages of each country not used:** E.g. Morocco is known for mathematics and physics, use this
- ❑ **Institutes are not linked to each other**

LACK OF AN OVERVIEW

- ❑ **Lack of expertise in all parts of sector:** Other disciplines do not know ER: Not just technical; also political, legal, commercial...
- ❑ **Impact on broader energy market ignored:** e.g. the impact on the energy grid as a whole, which could be really major
- ❑ **Different training according to type of technology:** wind power is not the same as solar for instance
- ❑ **Need training for technicians too**



Obstacles - Hidden Texts

application

Panel 2



INSUFFICIENT TECHNOLOGICAL DEVELOPMENT

- ❑ **Technological development:** it is not so much R&D but the adaptation of technology to the needs of the region
- ❑ **Bureaucracy slows innovation:** we need faster procedures

ATTRACTIVENESS OF STUDIES NOT GREAT ENOUGH

- ❑ **Why is there unemployment?** Jobs are not yet there, although there is a lack of qualified personnel for expert consultants
- ❑ **Environment is not yet prepared:** Is critical masse reached to justify training? Training should lead to jobs.

FINANCE LACKING

- ❑ **Financing studies and research:** Equipment not always best: need to buy better!

What options do we have to overcome the obstacles to training, R&D and innovation?

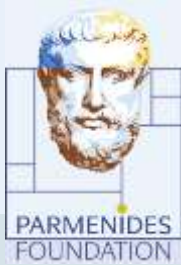
application

Panel 2



What are our options?

EXCHANGE OF INFO.	INTRA-REGIONAL RELATIONS	OVERVIEW	ATTRACTION OF STUDIES	TECH. DEVELOPMENT	FINANCES
Publish overview of courses	Encourage students to rotate	In-job training	Programme that accompanies	Work with industry: pilot projects	Institutional financing EUMENA
	Total cooperation (recherche & courses)	ER modules added to exist. disciplines	Job placements as part of study	Federate public /private successes	Project based approach
	E-Learning			Route map for research plans	Pilot plants managed by students



Options - Hidden Texts

application

Panel 2



EXCHANGE OF INFO.

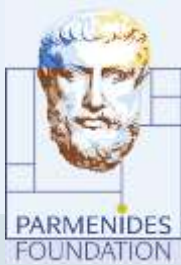
- ❑ **Publish over-view of courses /demand:** Relevant for what studies are available and what types of jobs will be in demand. This could be a website where you can find everything. Work together with industry. Morocco is about to have such a list, but this is needed all over MENA region.

INTRA-REGIONAL RELATIONS

- ❑ **Encourage students to rotate:** Either attending courses in other countries or simply taking one year within an existing course.
- ❑ **Total co-operation (research & courses):** Not just students moving, but real integration, possibly based on projects which drive forward a learning process sharing expertise around the region. Programmes with the EU too.
- ❑ **E-Learning**

OVERVIEW

- ❑ **In-job training:** E.g. for integrating ER into electric grids. Bring people who are already working on grids and give them practical training.
- ❑ **ER modules added to existing disciplines:** For instance add a PV course to an electrical engineering course. Aim should be to have local experts do this, rather than flying in people from abroad.



Options - Hidden Texts

application

Panel 2



ATTRACTION OF STUDIES

- ❑ **Programme that accompanies studies:** Training is just part of a bigger picture
 - launch an entire programme of industrialisation, which will generate jobs and real needs at the same time
 - It is essential that potential students understand this programme is also going on
- ❑ **Job placements as part of study**

TECHNOLOGICAL DEVELOPMENT

- ❑ **Work with industry: pilot projects.** E.g. the solar tower project in Algeria
- ❑ **Federate public/private successes:** to export these success stories in the context of the EU-Mediterranean cooperation
- ❑ **Route map for research plans**

FINANCES

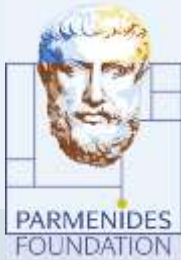
- ❑ **Institutional financing EU/MENA:** also encourage cooperation that is South-South-North
- ❑ **Project based approach:** For instance what is happening in Morocco with a series of projects being launched in 2012, 2013 et 2014
- ❑ **Pilot plants managed by students:** self financing studies and the students operate a pilot plant which generates power that can be sold.

How to allow for industrial integration and job creation in RE projects in the MENA region?

application

Panel 3





The overarching goal is the creation of local RE industries and related jobs in the MENA region

application

Panel 3



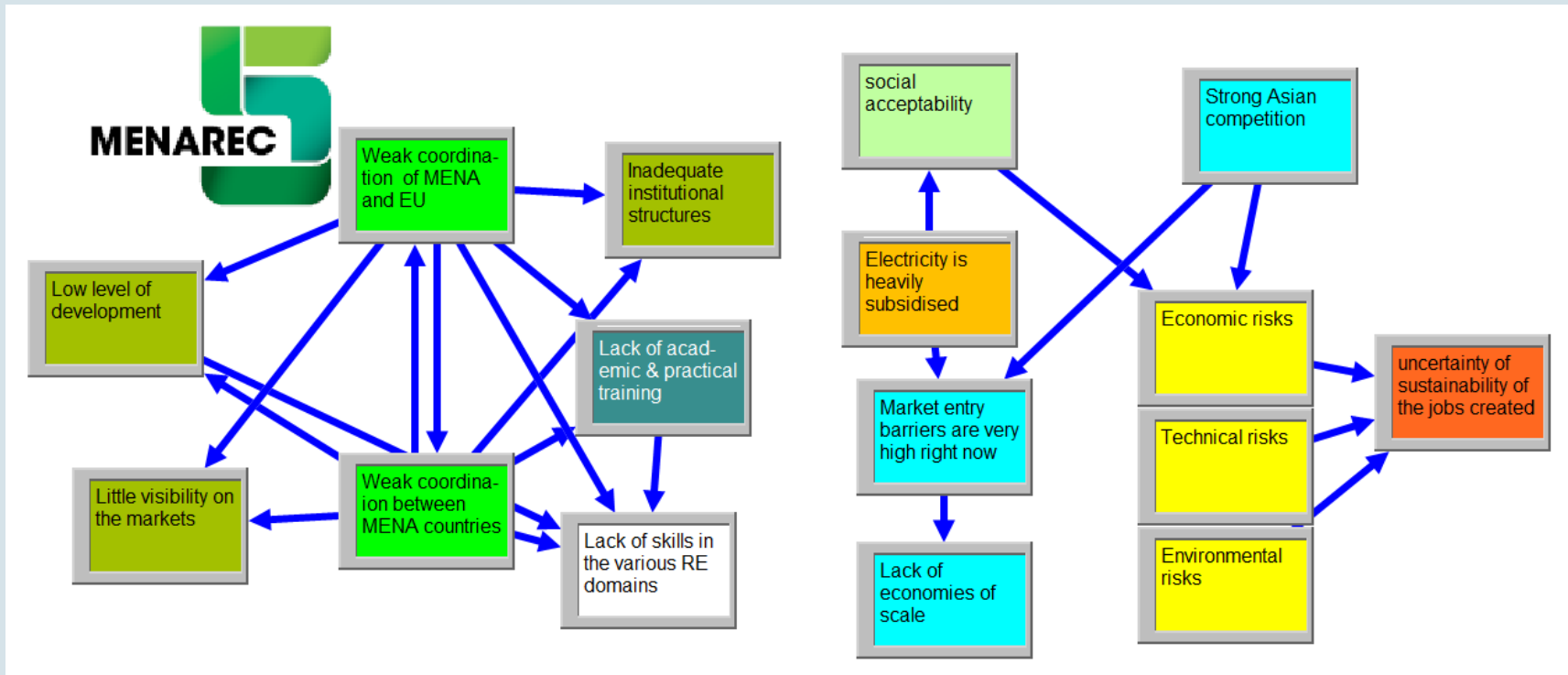
The following objectives can be associated with this goal:

- Developpement and integration of local industries in the RE production chain
 - Identify the size of the domestic market
 - optimise the socio-economic impact
- Diversify supply sources and ensure products are adapted to local needs
 - improve access of rural communities to suitable RE products
 - Develop the industrial value chains for each type of RE locally
- Increase the number of local jobs
- Ensure a transfer of technical know how and skills to the MENA region

Obstacles to the creation of local RE industries and related jobs in the MENA region

application

Panel 3



What options to create local RE industries and related jobs in the MENA region?

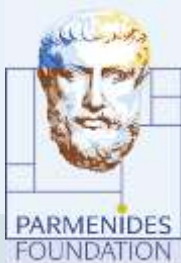
application

Panel 3



Options

EU support for MENA industry involvement	Reinforcement of EU-MENA cooperation	Reinforcement MENA-MENA cooperation	Choice of priority
Creation of a legal framework by	Develop a marketing strategy for	Incentives to invest by type of RE	Jobs
Creation of a SME financing framework	Combine foreign investment	Elaboration of industrialisation road maps: REs	Technological development
Create B2B platforms	Join forces with international	Focus choices on RE sectors to go for	Foreign investors
	Financial & technical support to SMEs	Reinforce SME cooperation with projects	



Options industry and jobs – hidden text

application

Panel 3



EU SUPPORT FOR MENA INDUSTRY INVOLVEMENT

- ❑ **Creation of a legal framework by RE sector:** This framework defines what has to be produced locally and other measures to support creation of a local industry
- ❑ **Creation of a SME financing framework:** fix a system of subsidy per eligible zone
- ❑ **Create B2B platforms**

REINFORCEMENT OF EU-MENA COOPERATION

- ❑ **Develop a marketing strategy for REs**
- ❑ **Combine foreign investment with local industry**
- ❑ **Join forces with international institutions in training:** Research and applied projects
- ❑ **Financial & technical support to SMEs**

REINFORCEMENT MENA-MENA COOPERATION

- ❑ **Incentives to invest by type of RE**
- ❑ **Elaboration of industrialisation road maps: REs**
- ❑ **Focus choices on RE sectors to go for**
- ❑ **Reinforce SME cooperation with projects**

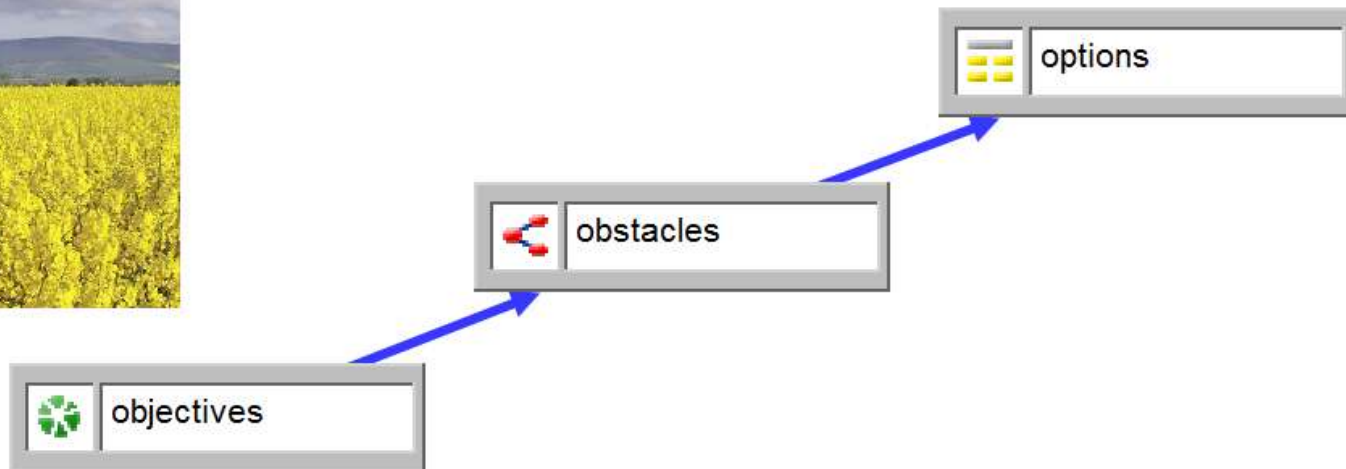
CHOICE OF PRIORITY

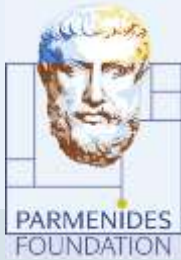
- ❑ **Jobs**
- ❑ **Technological development**
- ❑ **Foreign investors**

For a sustainable development through RE in the MENA region – what kind of sector integration?

application

Panel 4

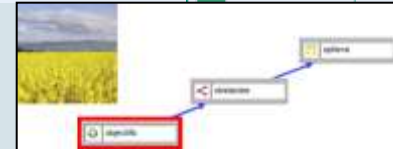






The overarching goal is sector integration of REs to promote sustainable development in MENA

application

Panel 4



The following objectives can be associated with this goal:

-  Integration of RE into different sector strategies so as to drive forward sustainable development in MENA
-  Sector specific economic development strategies which drive forward REs in the MENA region

Obstacles sector integration of REs to promote sustainable development in MENA

application

Panel 4



Weak/lack of integration in sector policies

Legal gaps and regulatory incoherencies

Financial barriers

Fossil fuel subsidies

Hesitation by certain decision makers

Limited interest accorded to REs in MENA

Difficulty in accessing credit for REs

Lack of commitment to diversify

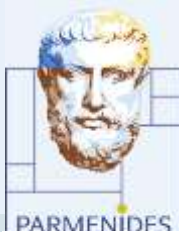
Lack of information and awareness

Lack of competence at local levels

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Hidden text:

❑ **Lack of commitment to diversify:** In some case focus on exhaustible rather than renewable resources



Options for sector integration

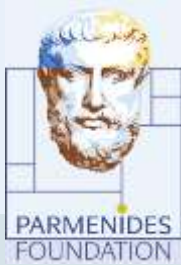
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Panel 4



Options

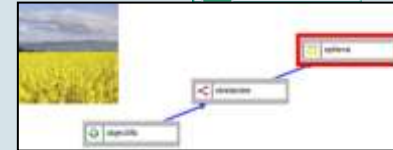
Finances	Strategies	Institutional and legal framework	Human resources	Technology	Communication
Adapt incentive mechanisms better	Specific RE action plans and projects	Adapt the legal and insittit frameworks	Share lessons on sector inte-gration of RE	Facilitate RE technology transfer	Develop communication strategies
Increase RE share of finance given for energy	Develop RE industry training & HR	Reinforce co-ordination of RE promotion	Push an engi-neering & man - agemt culture	Generalise successful experiences	Information & awareness action plan
Adapt pricing policy to promote RE	Develop a regional energy market		R&D: catalyst for local firm growth in RE	Develop tools for follow-up and evaluation	Education
Reform energy price tariffs	Promote inter-sector integration		Capacity building	Produce quality goods	
	Associate ER with EE		Equip sector operators: better tools	Quality standards and norms	
	Develop multi-partner approaches				



Options sector integration – hidden texts

application

Panel 4



FINANCES

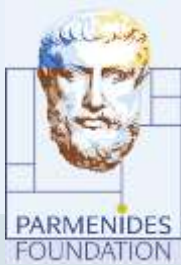
- ❑ Adapt incentive mechanisms better
- ❑ Increase RE share of finance given for energy
- ❑ Adapt pricing policy to promote RE
- ❑ Reform energy price tariffs

STRATEGIES

- ❑ **Specific RE action plans and projects:** to integrate RE into existing and new strategies
- ❑ Develop RE industry training & HR
- ❑ Develop a regional energy market
- ❑ Promote inter-sector integration
- ❑ Associate ER with EE
- ❑ **Develop multi-partner approaches:** Associate all relevant actors in the strategy building processes

INSTITUTIONAL AND LEGAL FRAMEWORK

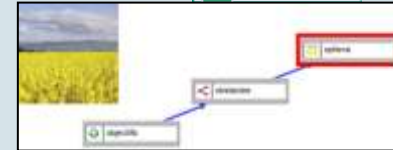
- ❑ **Adapt the legal and institutional frameworks:** To make them more favourable to promoting RE
- ❑ **Reinforce co-ordination of RE promotion:** Reinforce those authorities that are supposed to promote the emergence of RE



Options sector integration – hidden texts

application

Panel 4



HUMAN RESOURCES

- ❑ **Share lessons on sector integration of RE:** What practical lessons can be learnt from integrating RE into e.g. transport or urbanism policies?
- ❑ **Push an engineering & management culture:** Develop an engineering and management culture locally which can then use or promote RE
- ❑ **R&D: catalyst for local firm growth in RE:** Use targeted R&D projects to catalyse the emergence or participation of local firms in RE related projects in the MENA region
- ❑ **Capacity building**
- ❑ **Equip sector operators: better tools:** Sector operators need to know what RE technologies are available to them: there is a need for accompanying tools that show them this.

TECHNOLOGY

- ❑ **Facilitate RE technology transfer**
- ❑ **Generalise successful experiences**
- ❑ **Develop tools for follow-up and evaluation:** hence the impact of policies, projects etc can be evaluated
- ❑ **Produce quality goods**
- ❑ **Quality standards and norms**

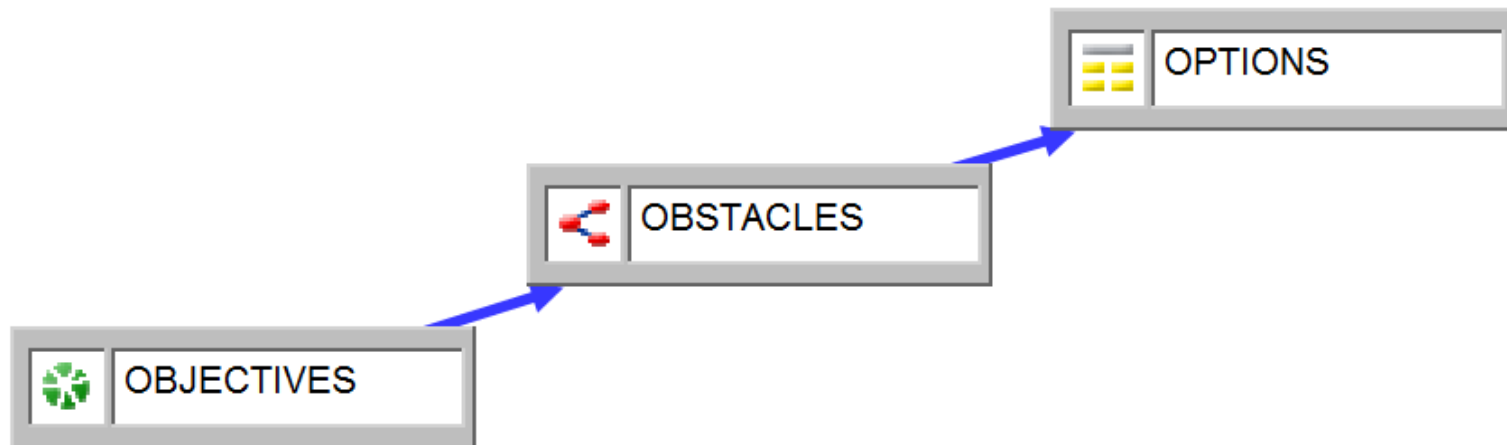
COMMUNICATION

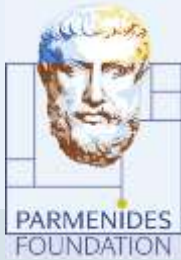
- ❑ **Develop communication strategies**
- ❑ **Information & awareness action plan**
- ❑ **Education**

State of the art of renewable energy technologies and suitable options for MENA countries

application

Panel 5





The overarching goal is to ensure MENA countries have access to the most suitable state of the art RE technologies

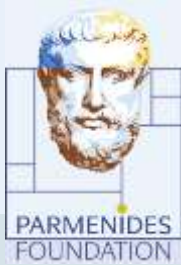
application

Panel 5



The following objectives can be associated with this goal:

- Develop RE strategies which make use of the most suitable and appropriate technologies
- Access easily information on the state of technological art in RE, its future development and role in the total energy mix
- Master the technical know-how needed to integrate RE into grids and to manage an EU-MENA grid
- Access easily the current costs, projected future costs and risks surrounding all forms of RE
- Take advantage of any new technological successes deployed in the EU-MENA region



Obstacles identified to MENA countries having access to the most suitable state of the art RE technologies

application

Panel 5



Lack of access to information

Skills for RE and EE lacking in MENA

Lack of a framework to exchange exper.

Lack of a common methodology

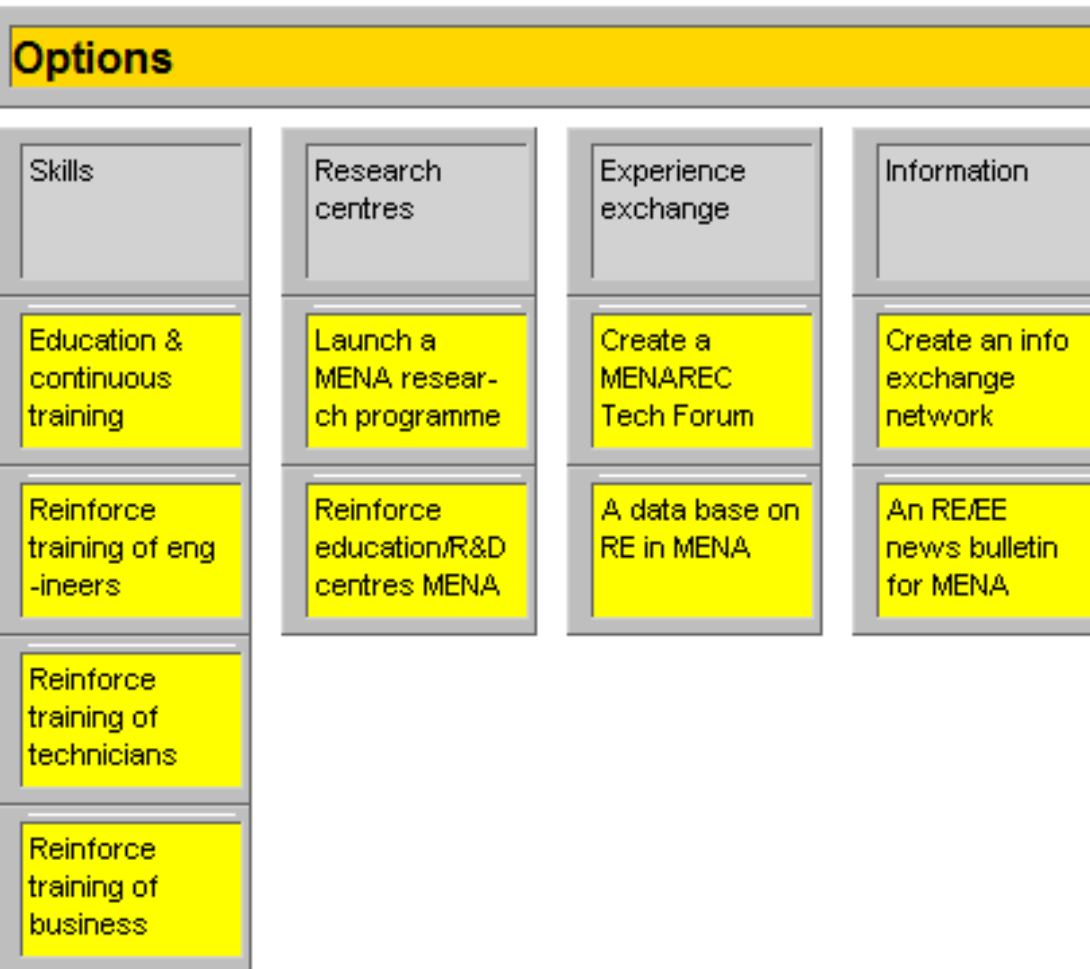
Lack of RE/EE research centres

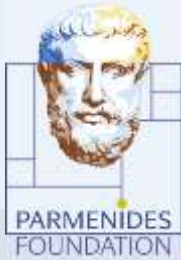
- ❑ **Lack of access to information:** Need better access to the technical and financial information about the most innovative RE and EE technologies. This type of information is needed to make informed choices for the MENA region
- ❑ **Skills for RE and EE lacking in MENA :** Including all skill types e.g.: - engineers - managers/economists/financers - technicians
- ❑ **Lack of a framework to exchange experiences.** The different countries would benefit if they could share experiences in this way
- ❑ **Lack of a common methodology:** MENA countries do not have a common way of evaluating which technologies are in the lead, what risks they face and how they may evolve
- ❑ **Lack of RE/EE research centres:** Applied research centres needed to be able to test and judge the usefulness of given technologies for the MENA region

Options to helping MENA countries having access to the most suitable state of the art RE technologies

application

Panel 5





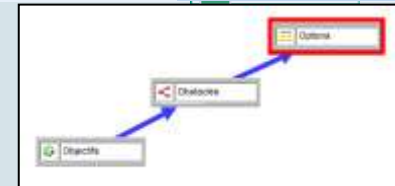
Options in state of art technology – hidden texts

application

Panel 5

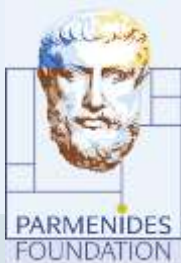
SKILLS

- ❑ **Education & continuous training:** Need to create specialised educational and training programmes in RE for the MENA region. Especially for solar and wind power. Experiences made here should be exchanged in the region. These should include in-job and continuous training (i.e. not just traditional university courses)
- ❑ **Reinforce training of engineers:** Develop adapted trainings for engineers so as they can understand RE and EE. Partner with engineering schools in the region for this
- ❑ **Reinforce training of technicians:** Develop adapted trainings for technicians so as they can understand RE and EE. Look at all types of RE, including solar, wind, hydroelectric....
- ❑ **Reinforce training of business:** Develop adapted trainings for business and managerial students so as they can understand RE and EE. Partner with business schools in the region for this



RESEARCH CENTRES

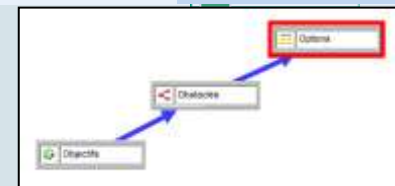
- ❑ **Launch a MENA research programme:** Focused on RE and their use in the MENA region. this could include research contracts bursaries...
- ❑ **Reinforce education/R&D centres MENA:** Reinforce the RCREE and also ensure that a series of more specialised centres appear, which can conduct a form of technology watch and encourage adaptation of existing technologies for the region with regards to : - solar power - wind power - hydro power.... -.....



Options in state of art technology – hidden texts

application

Panel 5



EXPERIENCE EXCHANGE

- ❑ **Create a MENAREC Tech Forum:** Organise this in parallel to the MENAREC conference every two or three years, with a presentation of how REs are being developed in the region. This could be in parallel with or a few days before/after MENAREC
- ❑ **A data base on RE in MENA:** A data base including various aspects : - potential and actual sources of RE - organisation and institutions -legislation -strategy -achievements -appropriate technologies

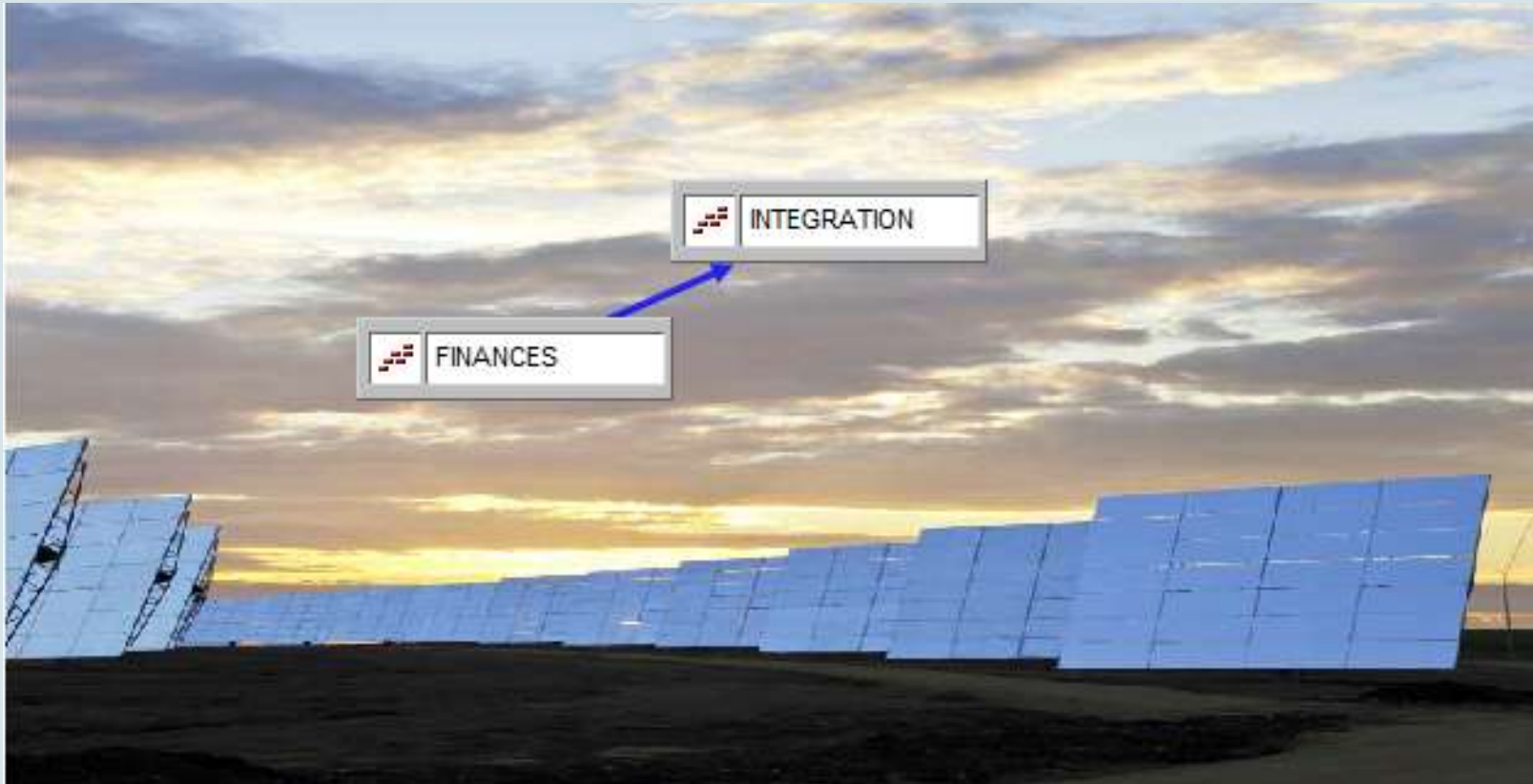
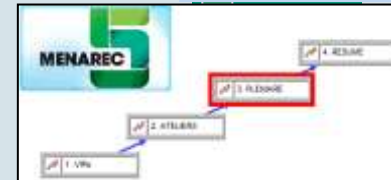
INFORMATION

- ❑ **Create an info exchange network:** Focused on the most interesting and emerging technologies, their costs, potentials and risks
- ❑ **An RE/EE news bulletin for MENA:** Spreading information on the RE and EE technologies

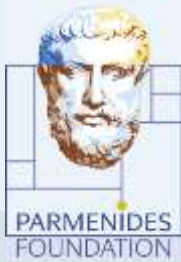
Finances et intégration régional de l'UE et la MENA

application

Plenary

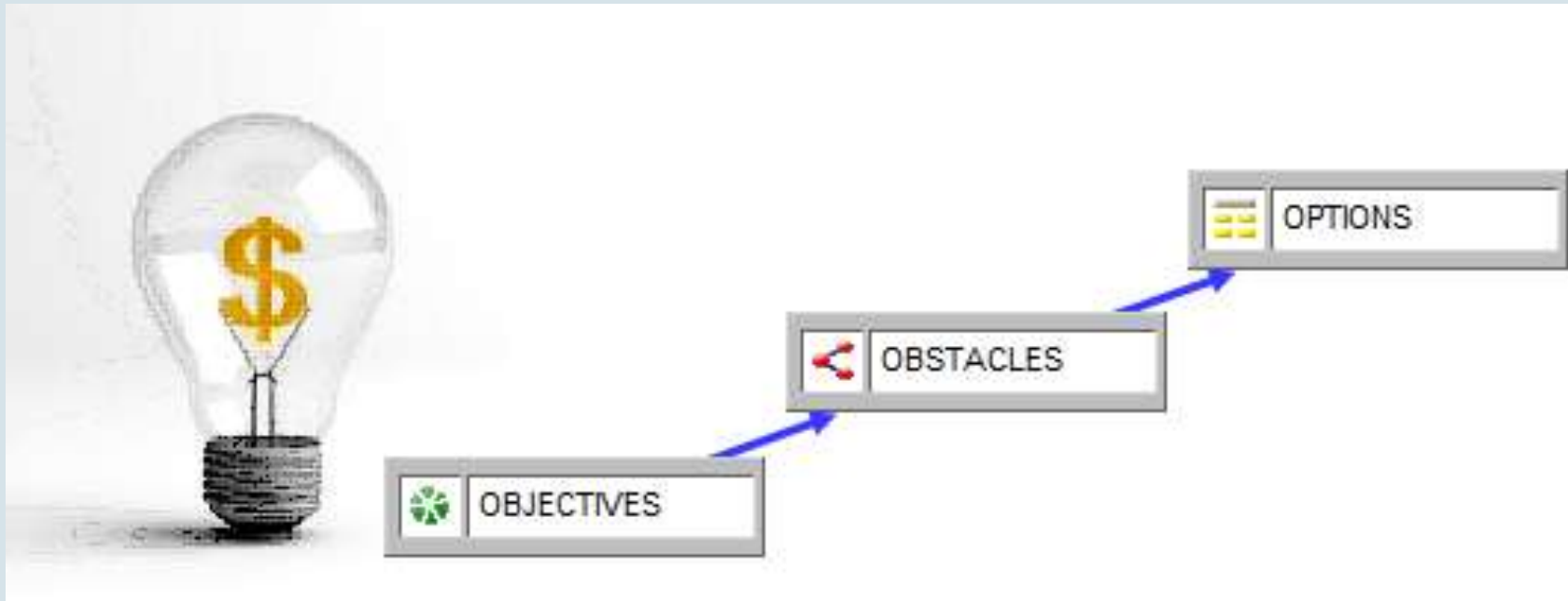


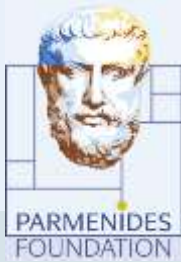
Finances



application

Finances







The overarching goal is to secure finances for a sustained roll-out of ER &EE in the MENA region

application

Finances



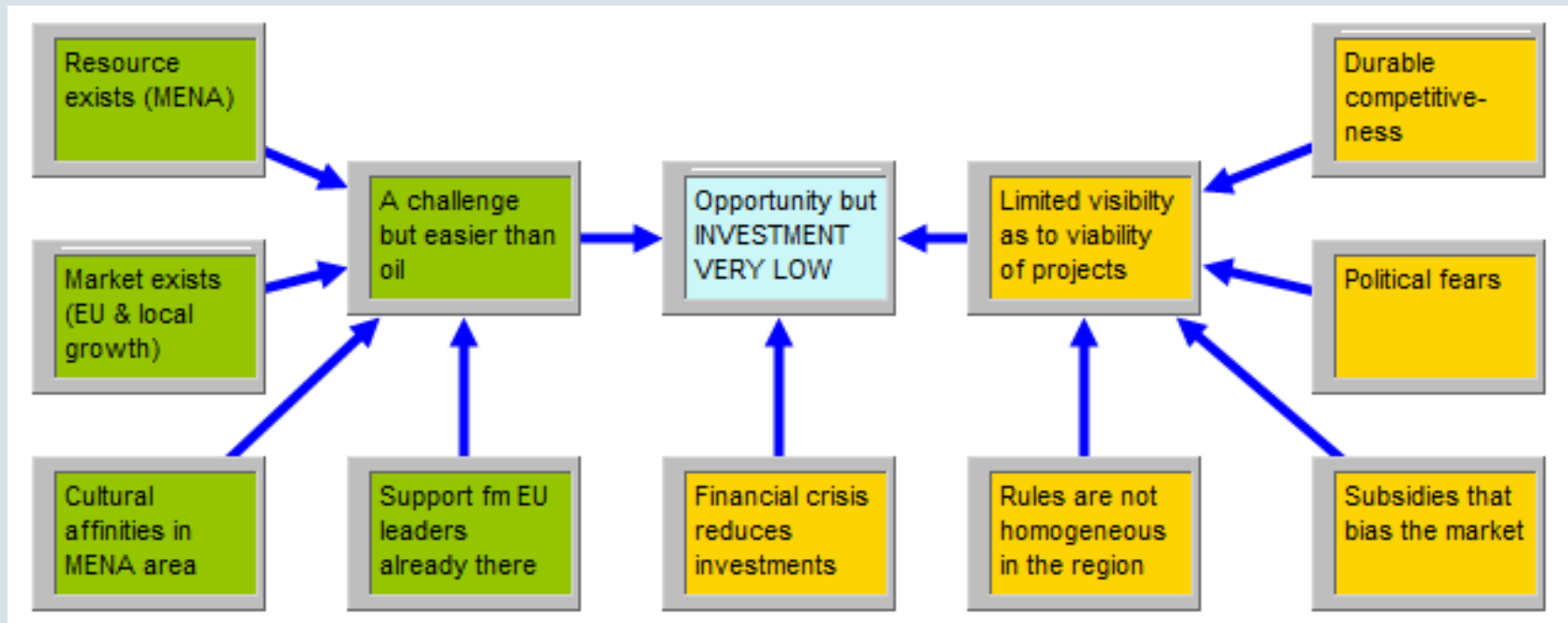
The following objectives can be associated with this goal:

-  Prime the ER market with start-up funds
-  Ensure mobilisation of very large sums for complete roll-out

There are factors encouraging (green) and hindering (orange) financial support for RE&EE in the MENA region

application

Finances



Hidden texts:

- ❑ **Market exists (EU & local growth):** Important to have an export market (EU), as this makes the financiers listen
- ❑ **Opportunity but INVESTMENT VERY LOW:** the number of already existing projects in implementation is very small
- ❑ **Durable competitiveness:** this is a process that takes years and years. MENA has not had that until now

Options to secure finances for a sustained roll-out of ER &EE in the MENA region

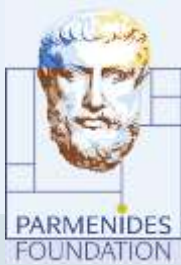
application

Finances



Finance Options

Gaining credibility	Market access	Political signals	Financing sources to be exploited	Business models
Some demonstration exports	Need to keep energy markets open	Strong message from EU	International funds for jump starting	Innovate and demonstrate feasibility
Prime market: topping up grants	Harmonise the rules on ER in the region	Exchange best practices	Get arab financial instits on board	
Reshape existing funds		Need for a stable policy environment	Open ER to private investment	
Publish indicators of progress per country			Use private sector foundation &	



Options to secure finances – hidden texts

application

Finances



GAINING CREDIBILITY

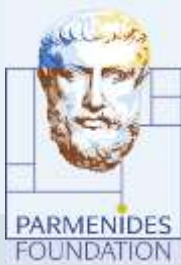
- ❑ **Some demonstration exports:** Prove that it really can be done with some small projects
- ❑ **Prime market: topping up grants:** especially for CSP to start with. Could be from the EU. Aim for 10% topping up
Use NIF
- ❑ **Reshape existing funds:** Do not start new ones, make better use of the ones that exist Simplify how they can be used. Standardised projects
- ❑ **Publish indicators of progress per country:** showing how each country is performing on a number of fronts including legislative and actual projects taking place

MARKET ACCESS

- ❑ **Need to keep energy markets open:** we should guarantee now a proper market access without barriers to trade so as this cannot become an issue in the future
- ❑ **Harmonise the rules on ER in the region:** Investors will find it difficult to understand and will fear a market fragmentation.

POLITICAL SIGNALS

- ❑ **Strong message from EU:** Have a clear political signal which makes investors feel there is definitely a market
- ❑ **Exchange best practices**
- ❑ **Need for a stable policy environment**



Options to secure finances – hidden texts

application

Finances



FINANCING SOURCES TO BE EXPLOITED

- ❑ **International funds for jump starting:** WB Clean technology fund, KFW/German government, EIB and EU NIF, AFD, AfDB
- ❑ **Get Arab financial institutions on board:** they were not focused on ER, rather on traditional fuels previously. This is changing
- ❑ **Open ER to private investment:** Private funds like the Renewable Energy fund in Morocco: 85% to be invested in wind power. 1m Dirham from Morocco, 1m from abroad Encourage PPP also.
- ❑ **Use private sector, foundations & sovereign funds:** Monaco is taking an initiative with sovereign funds

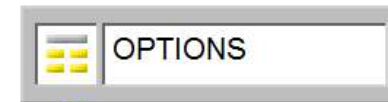
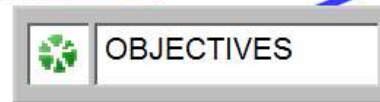
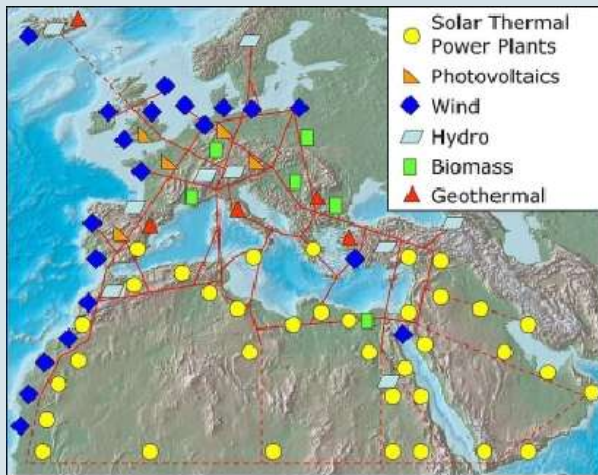
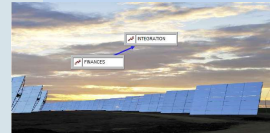
BUSINESS MODELS

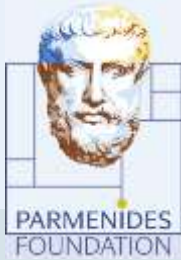
- ❑ **Innovate and demonstrate feasibility**

Prospect and challenges for a regional EU-MENA grid and market integration

application

Market











The overarching goal is to achieve an integrated EU-MENA grid & market

application

Market



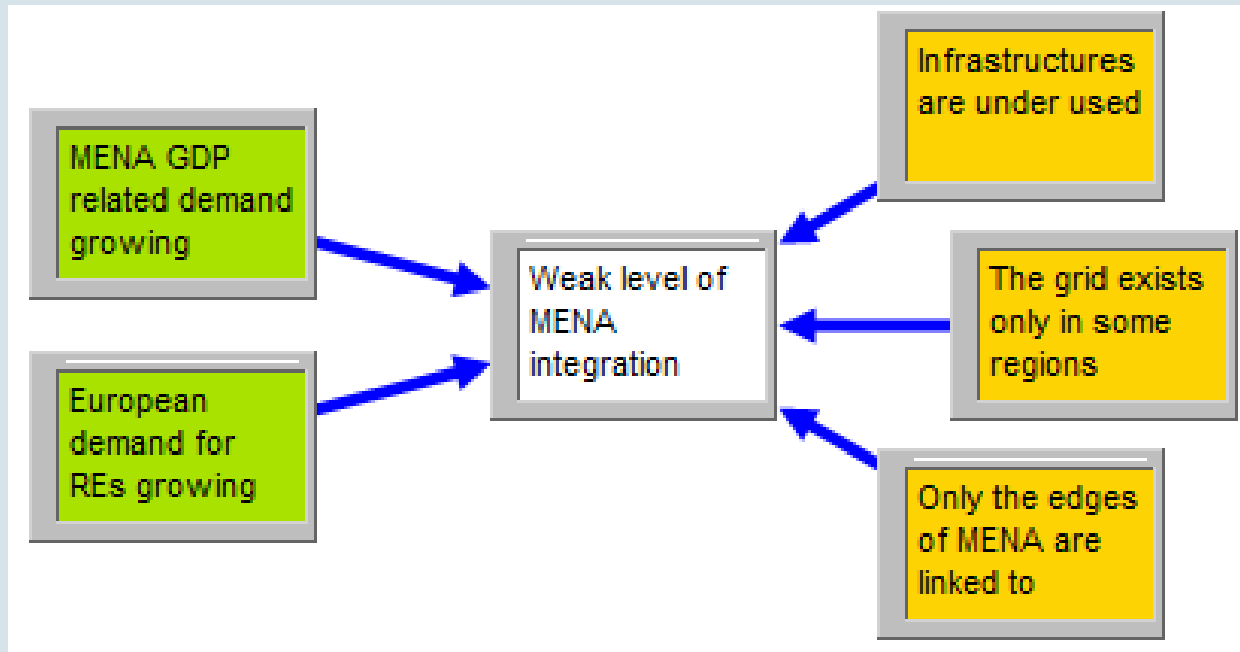
The following objectives can be associated with this goal:

- +  **Make the market more attractive by being larger**
-  Increase security of supply by diversifying sources
-  Spread loads by taking advantage of the different consumption profiles of the various countries
-  Make use of the comparative advantages comparatives of the different countries
-  Structure the EU-MENA dialogue
- +  Generate supplementary income

Integration of the markets: forces helping (green) and hindering (orange)

application

Market



Hidden texts:

- ❑ **European demand for REs growing:** specifically for REs with the 20/20/20 target
- ❑ **Weak level of MENA integration:** Only 5.5% of power is traded across frontiers
- ❑ **Only the edges of MENA are linked to Europe:** The grid is only connected in Morocco and Turkey

Options to help achieve an integrated EU-MENA grid & market

application

Market



Options

Liberalisation
of the market

Liberalise the
middle tension
market to REs

Preferential
access to the
market for REs

Close the gaps
in the grids

Plan priority
corridors to the
EU

Close gaps
between MENA
countries' grids

Later connect
the Sahel as
well

Facilitate
investments

Transparency
in investment
processes

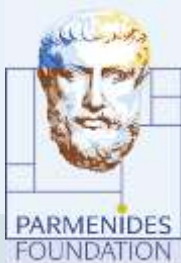
Protection of
investments/
investors

Encourage
private sector
involvement

Harmonise
legislation

A league of
Arab states
regulatory code

Regulator to
regulator
dialogues



Options for an integrated grid – hidden texts

application

Market



LIBERALISATION OF THE MARKET

- ❑ **Liberalise the middle tension market to REs:** allow new actors to access the market, and to sell to additional clients
- ❑ **Preferential access to the market for REs:** Make sure that REs are taken in priority to fossil fuels

CLOSE THE GAPS IN THE GRIDS

- ❑ **Plan priority corridors to the EU:** The main missing link is to Italy, but it is also possible to pass by a terrestrial route through the Eastern Med. Morocco has the same transmission standards as Sweden, so if the grid were extended, there is no reason why electricity cannot flow from the very South to the very North.
- ❑ **Close gaps between MENA countries' grids:** Lots of small gaps, and a few big ones need to be closed
- ❑ **Later connect the Sahel as well**

FACILITATE INVESTMENTS

- ❑ **Transparency in investment processes**
- ❑ **Protection of investments/ investors:** Could be guaranteed with the European Energy Charter, but bilateral agreements would also be possible
- ❑ **Encourage private sector involvement**

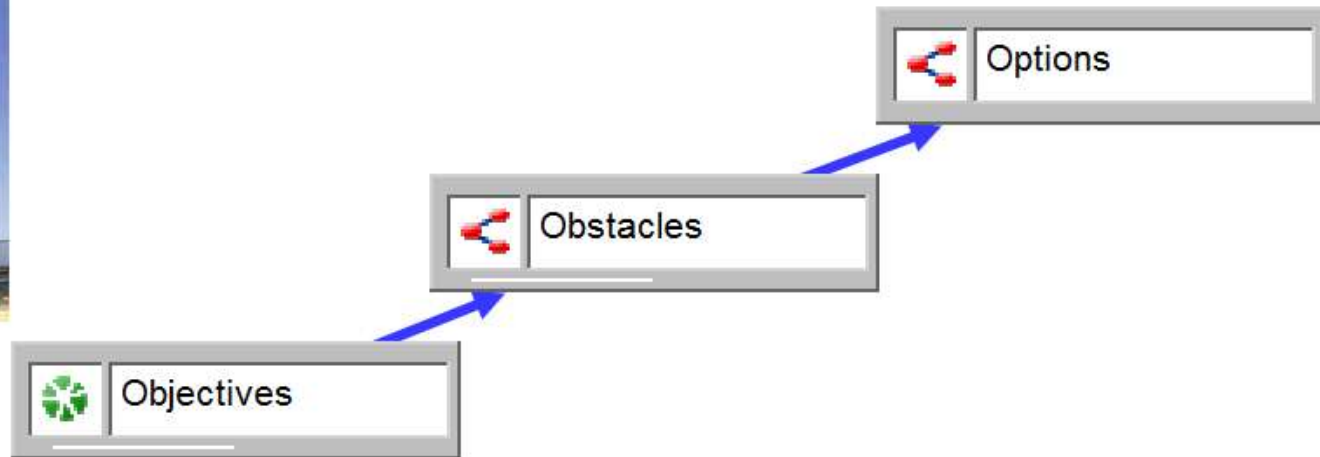
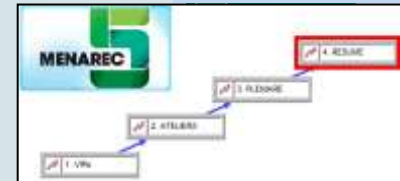
HARMONISE LEGISLATION

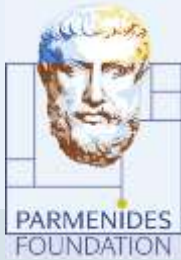
- ❑ **A league of Arab states regulatory code:** However, this is also based on EU legislation, and ideally the two should not be too different to ensure reciprocal market access
- ❑ **Regulator to regulator dialogues:** Encourage the various regulators in the region to talk with each other so as legislation is approximately the same in its conception and application

Summary

application

Summary










Top level goal: sustainable development of RE/EE in the MENA region

application

Summary



The following objectives can be associated with this goal:

-  Increase share of REs in total energy mix
-  Create an RE industrial base in MENA countries
-  Improve access of all, especially the poorest, to energy
-  Promote sustainable development and decrease carbon emissions
-  Give a structure to EU-MENA relations

Obstacles to the sustainable development of RE/EE in the MENA region

application

Summary



Political/legal/
institutional
problems

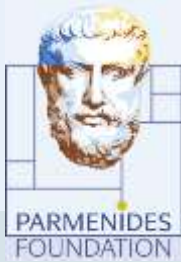
Gaps in the
available
information

Research and
training not
adapted

Lack of a
united market
EU-MENA

Local industry
not involved in
RE

Insufficient
finance

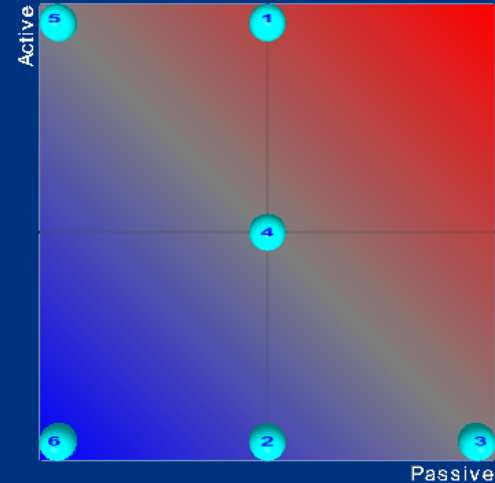
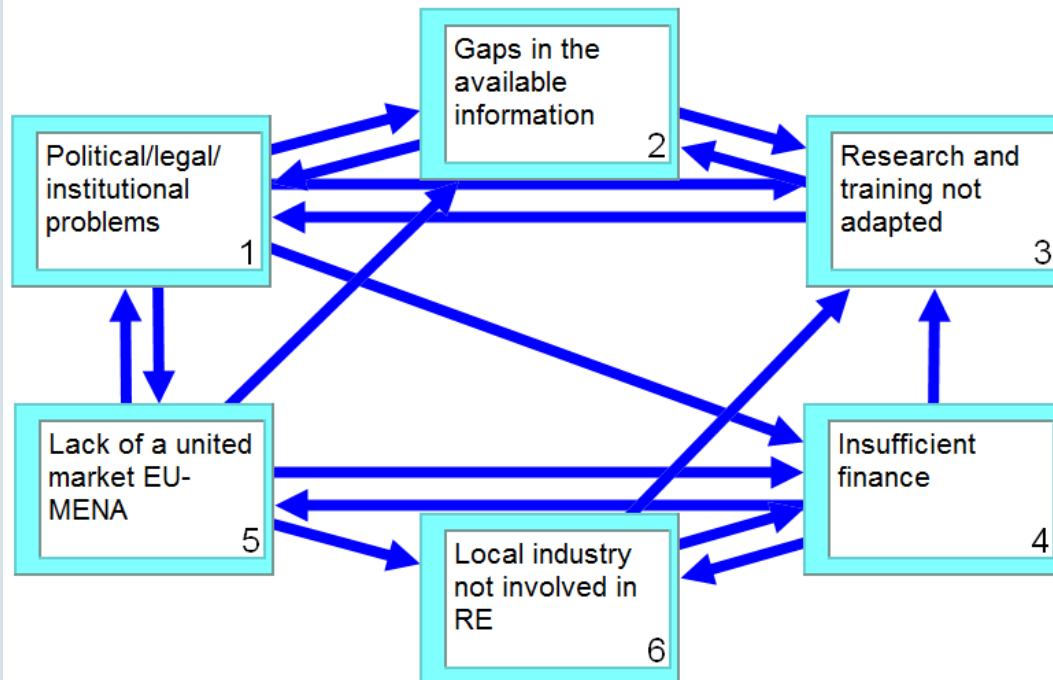


The key obstacles to the sustainable development of RE/EE in the MENA region

application

Summary

Purely for illustrative purposes, it was shown that the obstacles are linked with each other and that as a result it is possible to identify which are more active (have more influence on the system) and which are more passive (are influenced by the system). Usually a strategy focuses on affecting those issues which are most active (boxes 1, 4, 5 in this case), as changing them is key to making the system as a whole shift.



Recommendations: the most important changes needed

application

Summary



Seven recommendations deal with the three most influential obstacles, and must be important as they were very frequently repeated in the course of the conference:

Political/legal/institutional framework

Harmonise & implement the legislation

Study the subsidies issue

Ensure that markets remain open

EU-MENA market & partnership

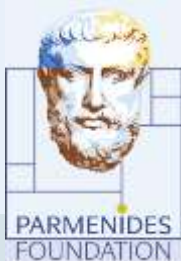
Create a single big grid EU-MENA

Roll out "proof of concept" projects

Finances

Increase funding available for RE

Investment protection and transparency



the most important changes needed (hidden text)

application

Summary

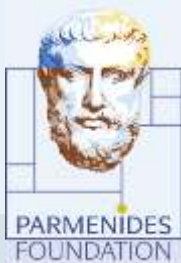


GAPS IN THE AVAILABLE INFORMATION

- ❑ **Harmonise & implement the legislation:** 1. Identify what gaps in legislation still exist and which elements need to be the same for a single MENA market to function 2. Incorporate these elements into the legislation of every country 3. Ensure that they are put into practice on the ground (with a complete battery of implementing legislation, norms and standards and trained legal system/courts etc)
- ❑ **Study the subsidies issue:** It is essential to find a better way of protecting the poor without inhibiting RE with subsidies for fossil fuels The ministers suggested to have IRENA make a study on these subsidies, although it transpires that another study may already be on-going (with RCREE?) that covers 13 countries
- ❑ **Ensure that markets remain open** Guarantee already now that there will be: - Proper market access without barriers to trade - No import/export restrictions or customs or tariffs

RESEARCH AND TRAINING NOT ADAPTED

- ❑ **Create a single big grid EU-MENA:** This implies a physically linked grid from the Arabian Gulf to the Atlantic. It also requires the creation of a regional wholesale energy market and corresponding commercial instruments (spot electricity market etc)
- ❑ **Roll out "proof of concept" projects:** Show rapidly that it is a perfectly feasible scheme to import RE electricity from N. Africa to Europe with pilot projects, so as everybody else wants to jump on the bandwagon. The DESERTEC Industrial Initiative is already discussing such projects with Morocco, Tunisia and Algeria



the most important changes needed (hidden text)

application

Summary



INSUFFICIENT FINANCE

- ❑ **Investment protection and transparency:** One option would be for all countries to join the European Energy Charter as full members. In any case it is necessary to ensure that there is - no discrimination (national vs. out of country investment), - access for all types of investors - protection of any investments made
- ❑ **Increase funding available for RE:** Much more money is needed for RE projects, and this could come from any of a variety of sources: - institutional EU/MENA - project based finance - special funds for SMEs - private sector - foundations - sovereign funds

Recommendations: Things that can be done quickly

application

A number of additional things could be done quickly to reinforce the chances of overcoming all six obstacles:

Political/legal/institutional framework

Wanted: clear political signal from the EU

Multistakeholder & regulator dialogues

Predefine and publish ER/EE policies

EU-MENA market & partnership

Accelerate the MSP's implementation

Develop a road map for integration

Finances

Use grants to top up initial project funds

Adapt existing funds to the needs of RE

Information

Publish indicators of progress per country

Awareness & information campaigns

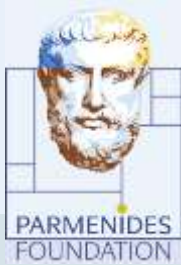
Training & research

Insert RE modules into existing

Promote and use E-learning

Involvement of local industry

Biannual Industrial/Technical Forum



Things that can be done quickly – hidden texts

application

POLITICAL/LEGAL/ INSTITUTIONAL FRAMEWORK

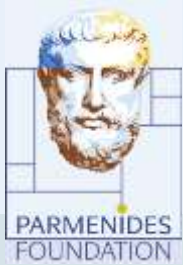
- ❑ **Wanted: clear political signal from the EU:** A clear political signal which reassures investors that despite the crisis there is definitely a market: ideally a declaration at the next European Council. Indeed, the EU should accelerate its own implementation of RE and EE, and sign contracts which commit to imports from MENA region already now.
- ❑ **Multi-stakeholder & regulator dialogues:** Create national platforms that bring together key actors, e.g.: - regulators - private sector - financiers - universities - etc. Also ensure that the EU and MENA regulators meet together regularly to exchange on best practices.
- ❑ **Predefine and publish ER/EE policies:** each country should establish its own 2020 road map: - targets should be clear, ambitious and with numbers attached - quality norms and standards should also be defined. Do not forget EE!

EU-MENA MARKET AND PARTNERSHIP

- ❑ **Develop a road map for integration.** This should show how the grids will be integrated with dates announced and plans widely made public.
- ❑ **Accelerate the MSP's implementation.** The Mediterranean Solar Plan needs to go faster: - More regional Networking - Create opportunities for regular UfMS member states (MS) meeting - UfMS / MSP as focal points in MS.

FINANCE

- ❑ **Use grants to top up initial project funds:** especially for CSP to start with. This could be from the EU's NIF. Aim for 10% topping up to make the first projects fly whilst the technology is not completely perfected.
- ❑ **Adapt existing funds to the needs of RE:** Do not start new funds, make better use of the ones that exist. Simplify how they can be used. Standardised projects.



Things that can be done quickly – hidden texts

application

INFORMATION

- ❑ **Publish indicators of progress per country.** Have a one stop shop to see how well each country in the region is performing from many points of view - technical progress - institutional - legislative - implementation of legislation - ...
- ❑ **Awareness & information campaigns**

TRAINING AND RESEARCH

- ❑ **Insert RE modules into existing programmes:** It is much easier to add a single module to an existing well-established course than it is to create an entirely new course only focused on RE. Notably we should add an RE course for those studying: - electrical engineering - business legal - finance. Preferably the course should be taught by local universities.
- ❑ **Promote and use E-learning:** Many courses already exist or are being adapted. this should be encouraged.

LOCAL INDUSTRY INVOLVEMENT

- ❑ **Biannual Industrial/Technical Forum:** Allow industry in the MENA region to have their own event prior to or along side of MENAREC so as to involve local firms in the opportunities being created.

Conference recommendations: Issues needing long term continuous action

application

In addition a number of other items need to be worked on continuously to overcome the obstacles identified:

Political/legal/institutional framework

Give RE
preferential
access to grid

Integrate ER/
EE in sector
policies

Fiscal subsidy
for RE/limit
taxes on RE

EU-MENA market & partnership Finances

Build an
intelligent grid

Encourage
transfer of RE
technology

Open ER to
private
investment

Information

Ensure trust-
worthy data
available

Create a MENA
info. exchange
network

Training & research

Engineering &
management
culture in RE

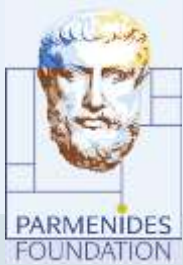
Total coopera-
tion of educat
/R&D centres

Reinforce
education/R&D
centres

Involvement of local industry

Encourage
public-private
partnerships

Involve local
industry in R&D
projects



Issues needing long term continuous action – hidden texts

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POLITICAL/LEGAL/ INSTITUTIONAL FRAMEWORK

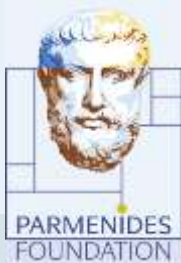
- ❑ **Integrate ER/ EE in sector policies:** Integrate ER and EE into other policy areas such as transport, urbanism, agriculture, tourism...
- ❑ **Give RE preferential access to grid:** Producers of RE should be given preference in grid access, and hence their type of energy used in preference to fossil fuels
- ❑ **Fiscal subsidy for RE/limit taxes on RE**

EU-MENA MARKET AND PARTNERSHIP

- ❑ **Build an intelligent grid**
- ❑ **Encourage transfer of RE technology**

FINANCE

- ❑ **Open ER to private investment:** Encourage private funds like the one being created in in Morocco, where 85% is to be invested in wind power. 1m Dirham to be raised in Morocco, 1m from abroad.



Issues needing long term continuous action – hidden texts

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INFORMATION

- ❑ **Ensure trust-worthy data available:** IRENA can aid here Need to share:
 1. the structure in which to publish the information (Data must be comparable)
 2. the information itself
- ❑ **Create a MENA info. exchange network :** Share the strategic approaches taken and the experiences in promoting RE and related technologies:
 1. take advantage of what is learned in the more advanced countries of the region
 2. work out lessons to be drawn from integrating ERs into sector policies

TRAINING AND RESEARCH

- ❑ **Engineering & management culture in RE:** Promote the creation of a group of individuals who have an engineering and/or management culture and who are aware of the opportunities and advantages of RE
- ❑ **Reinforce education/R&D centres:** Reinforce the RCREE and also ensure that a series of more specialised centres appear, which can conduct a form of technology watch and encourage adaptation of existing technologies for the region with regards to : - solar power - wind power - hydro power.... -.....
- ❑ **Total cooperation of educational/R&D centres:** Not just students moving, but real integration, possibly based on projects which drive forward a learning process sharing expertise around the region

LOCAL INDUSTRY INVOLVEMENT

- ❑ **Involve local industry in R&D projects:** Initiate a programme of research in RE that engages industry. Offer research contracts as well as study bursaries
- ❑ **Encourage public-private partnerships:** 1. Involve the private sector in the development of the RE strategies for each country in the region 2. reinforce cooperation with SMEs using micro-projects involving RE

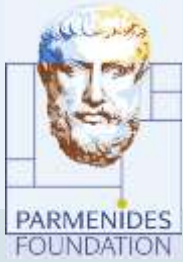
Recommendations:

Issues added to the summary by the public

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In addition a couple of items were added by the public after the summary was presented at the end of the conference:

Political/legal/institutional framework			EU-MENA market & partnership		Finances	
Harmonise & implement the legislation	Wanted: clear political signal from the EU	Give RE preferential access to grid	Create a single big grid EU-MENA	Accelerate the MSP's implementation	Increase funding available for RE	Use grants to top up initial project funds
Study the subsidies issue	Multistakeholder & regulator dialogues	Integrate ER/EE in sector policies	Roll out "proof of concept" projects	Build an intelligent grid	Investment protection and transparency	Open ER to private investment
Ensure that markets remain open	Predefine and publish ER/EE policies	Fiscal subsidy for RE/limit taxes on RE	Develop a road map for integration	Encourage transfer of RE technology	Adapt existing funds to the needs of RE	
Information		Training & research		Involvement of local industry		
Publish indicators of progress per country	Ensure trustworthy data available	Insert RE modules into existing	Engineering & management culture in RE	Reinforce education/R&D centres	Biannual Industrial/Technical Forum	Encourage public-private partnerships
Awareness & information campaigns	Create a MENA info. exchange network	Promote and use E-learning	Total cooperation of education/R&D centres		Involve local industry in R&D projects	
Keep water in mind	Send a message to the RIO+ process	Educate the children	Encourage continuity in MENARECs	Focus more on "off-grid" communities	Do not forget social/democratic side of RE	



Points added by the public – hidden texts

application

- ❑ **Keep water in mind:** Needed for life - should be included alongside energy
- ❑ **Send a message to the RIO+ process**
- ❑ **Educate the children:** Start at nursery schools and ensure RE and EE is included all the way through the curricula
- ❑ **Encourage continuity in MENARECs:** Ensure that material gathered here - needs to be reflected in the MENAREC VI Also unfortunate we did not get the other four tracks (workshops) Have some kind of life between MENARECs
- ❑ **Focus more on "off-grid" communities:** This is a different track. How do we deal with these people
- ❑ **Do not forget social/democratic side of RE:** RE hands power to small, decentralised production. It is an instrument of social and democratic empowerment

